

UPM Nordland Papier

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2019



UPM Nordland Papier

UPM Nordland Papier is located in the Emsland town of Dörpen/Lower Saxony. Founded in 1967, the paper mill ranks today among the biggest fine paper producers worldwide.

UPM Nordland Papier produces woodfree graphic writing and printing papers – so-called fine papers – on four paper machines and two coating machines. The mill makes paper from chemical pulp. Calcium carbonate is used as a filler. Coated paper grades additionally contain kaolin as a pigment.

The wastewater generated from the production processes is cleaned in the mill's own effluent treatment plant before it is discharged into the Ems river. Fresh water is drawn from deep wells, paying attention to sustainable groundwater regeneration. All of the electricity required by the mill is purchased from the local power company. The steam required for paper drying is generated by combustion of natural gas in the mill's own combined heat and power plant.

Two daughter companies of UPM-Kymmene Beteiligungsgesellschaft operate on the mill premises. The nortrans Speditionsgesellschaft mbH provides freight transport services for the paper mill. NorService GmbH specialises in custom paper finishing. These two companies are not validated under EMAS.



UPM Nordland Papier Environmental and Societal Responsibility 2019 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental and societal performance data and trends for the year 2019. The annually updated mill supplements and the UPM Corporate Environmental and Societal Responsibility Statement together form the joint EMAS Statement of UPM Corporation. The next Updated UPM Corporate Environmental Statement and also this supplement will be published in 2021.

UPM offers renewable and responsible solutions and innovates for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. As the industry leader in responsibility we are committed to the UN Business Ambition for 1.5°C and the science-based targets to mitigate climate change. We employ 18,700 people worldwide and our annual sales are approximately EUR 10.2 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils. www.upm.com

Production capacity	Up to 1,235 million tonnes/annum	
Personnel	Approx. 1,281 (total headcount including apprentices) as at 31.12.2019	
Products	Fine Papers:	UPM Finesse
	UPM Fine	UPM Digi
	UPM Preprint	UPM Mail
	UPM Office	UPM PrePersonal
	UPM Label	UPM Office Recycled plus
	UPM Unique	UPM Office Recycled premium
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System Standard ISO 9001 – Quality Management System Standard ISO 50001 – Energy Management System Standard OHSAS 18001 – Occupational Health and Safety System Standard PEFC™ Chain-of-Custody – Programme for the Endorsement of Forest Certification FSC® Chain-of-Custody – Forest Stewardship Council®	
	All certificates can be found from UPM's Certificate finder (available at upm.com/responsibility)	
Environmental labels	EU Ecolabel for copying and graphic paper Blue Angel for UPM Office Recycled plus	



For more information about FSC certification visit www.fsc.org



For more information about PEFC certification visit www.pefc.org



EU Ecolabel : FI/011/001



www.blauer-engel.de/uz72

Review of year 2019

ENVIRONMENTAL PERFORMANCE IN 2019

Sustainable operations

UPM was listed in the Down Jones European and World Sustainability Indices (DJSI) for the seventh time in a row and again named Paper and Forest industry leader in 2019. The DJSI assessment is based on the analysis of the economic, environmental and social performance of businesses. Important activities at our mill in this respect include sustainable sourcing of pulp, continuous improvement of resource efficiency, an open mind for new technologies, particularly in the environmental field, and taking responsibility for our workforce, the local communities and our stakeholders. In this way, economy, environmental protection and social cohesion go hand in hand.

Clean Run campaign

In 2019 too, a strong focus was on the Clean Run campaign, aimed at environmentally friendly production without environmentally relevant incidents. In a Group-wide database, employees can record deviations according to predefined categories, from 0 (not significant) to 5 (serious environmental damage). The number of reported incidents remained constant at 2018 levels. There were mainly minor observations, which demonstrates the employees' awareness of environmental safety issues. Unfortunately, there were two category 3 incidents in 2019, which were analysed and investigated in detail (for more detailed information, see page 6). In addition, a root cause analysis of the less serious categories (0–2) is carried out regularly in order to be able to specifically eliminate the most common Clean Run problems.

Major environmental projects

As papermaking is a water-intensive industry, our focus is on conserving water bodies and using water resources sparingly. Having been able to take the first

samples of treated wastewater from our new reverse osmosis and ultrafiltration plant in the summer of 2018, our emphasis in 2019 was on further optimising the plant's operation. A partial stream of the wastewater is now used in production to replace fresh water. By the end of 2019, we reached an average of 75 m³/h and we aim to further increase this amount in 2020.

In 2019, we converted paper machine 2 to glassine paper production. The commissioning at the end of the year also impacted the wastewater quality. Therefore, additional optimisations are necessary in the field of process water treatment.

Flora and fauna

As every building and every car park inevitably results in surfaces being sealed, UPM Nordland decided years ago to create compensation areas by greening three roofs, which resulted in an additional 1.35 hectares of green space.

Last year, bird nets were placed in front of many windows in the mill's production

area and a roof was installed on the waterworks' ventilation tower. This prevents birds from flying into the buildings and protects them from possible injuries they might suffer inside the halls.

Third-party audits

UPM Nordland Papier's environment-friendly business practices are based on UPM Communication Paper's environmental policies. Environmental concerns have always been deeply ingrained in our way of thinking and doing business. Certification to ISO 14001 and validation to the EU's Eco-Management and Audit Scheme (EMAS) in 1998 just provided the formal framework for this approach. In the course of the last years, we have broadened our certifications to include PEFC, FSC and the EU's environmental labelling scheme ("EU flower") and, in 2012, ISO 50001.

These successful measures strengthened our resolve to also in the future have our environmental performance third-party-audited.



Klaus Reimann,
General Manager



Barbara T. Köster,
Manager Environmental Affairs

Responsibility figures 2019



Air

28%

reduction in CO₂ emissions
from 2010



Energy

Specific power consumption
reduced by

8.08%

since 2010

Specific gas consumption
reduced by

7.14%

since 2010



Health

Number of times employees made use
of our healthcare offerings in 2019:

2,611

Water



COD load reduced by

40%

in comparison with 2010

Phosphorus load reduced by

53%

in comparison with 2010

Workforce



Approx. **6.700**

training days for our employees in 2019

Certified fiber



under PEFC/FSC
(sustainable forestry)

> 89%

Air



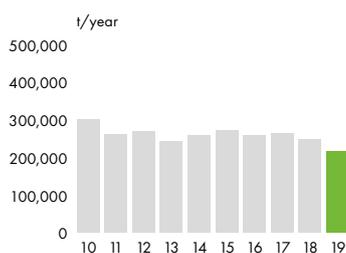
As UPM Nordland Papier uses pure, low-sulphur natural gas, it is not necessary to measure the concentration of sulphur in the exhaust air.

The boiler plants are still being operated close to their emissions limit of 100 mg/m³ NO_x. Therefore, varying weather conditions still have an impact on the boiler plants' emissions characteristics. The boiler operating staff must intervene manually to ensure that the limit values are not exceeded in these special situations.

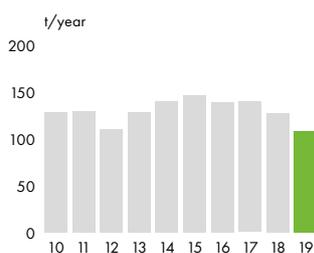
In June 2019, faulty operation led to the CO limit being exceeded, which had to be reported as a Clean Run Category 3 incident. During the Whitsun shutdown, boiler 6 was run in automatic mode at the O₂-setpoint for full load. The CO value rose above the permitted limit of 50 mg/m³, reaching up to 113 mg/m³. After the boiler operator had detected this problem and increased the O₂ value manually, the plant was back in compliance with the limit values. Appropriate measures were derived from the incident.

	Limit value (mg/m ³)	Mean values measured (mg/m ³)					
		Boiler 1	Boiler 3	Boiler 4	Boiler 5	Boiler 6	Boiler 7
CO	50	2.07	out of service	2.45	5.93	1.00	0.95
NO _x	100	85		75	90	86	85

Fossil carbon dioxide, CO₂



Nitrogen oxide, NO_x



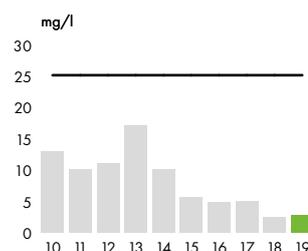
Water



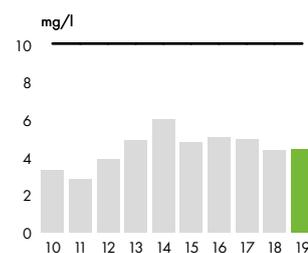
In 2019 the effluent treatment plant ran mostly stably. The average annual outflow concentration being much lower than the statutory requirements, we committed ourselves to the authorities to meeting much stricter limits for specified parameters.

Nevertheless, there was one Clean Run category 3 incident in 2019. In January, there was, for a short time, flocculation in the outflow from the treatment plant, resulting in the COD and phosphorus limits being exceeded. The causes were analysed and the actions to be taken actively coordinated with the authorities in charge.

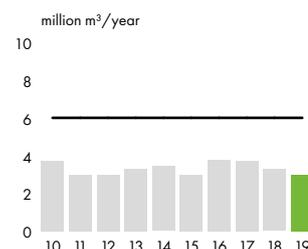
Biological oxygen demand, BOD₅



Nitrogen (inorganic), N



Effluent volume



Waste



In 2018 we started to reduce the amount of cleaned effluent discharged into the river Ems. In order to achieve this, we put into operation our new process water treatment plant with ultrafiltration and reverse osmosis and started optimising it. The relevant work continued in 2019. The planned recycling rate is expected to be fully reached in 2020.

Effluent treatment at UPM Nordland Papier

The site carries out primary sedimentation, biological treatment and secondary sedimentation of its effluents.

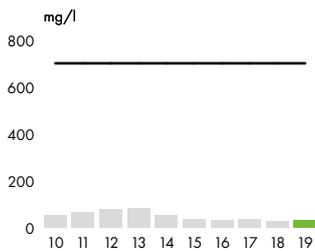
Fibre and paper sludge constitute the largest waste fraction at UPM Nordland Papier. Action is currently underway to reduce their volume.

Overall, the amount of waste in 2019 was higher than in previous years. This was due to the rebuild of paper machine 2, which has by now been completed.

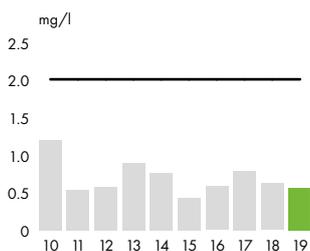
The waste recovery rate in 2019 was 98.5%, remaining at the customary high level in spite of the large PM2 building project.

All wastes are forwarded to certified waste management companies for disposal and the generation of "hazardous" wastes is avoided wherever possible.

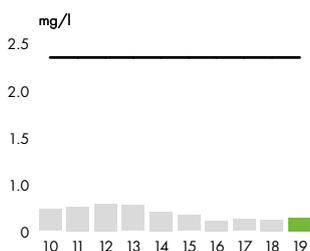
Chemical oxygen demand, COD



Phosphor, P



Adsorbable organic halogen compounds, AOX



— Limit value
■ Annual mean value

Organisational structure and emergency organisation

As required by law, appointed officers advise the mill management and the specialist departments in the areas of water protection, waste, hazardous goods, radiation, fire and laser protection and data security. In addition to the operators in charge of the plants, there are designated individuals in charge of the operational implementation. This also includes requirements regarding immission control, hazardous waste and the industrial safety ordinance.

In addition, there are designated representatives responsible for the integrated management system (quality, environment, energy and occupational safety). Relevant organisational charts are available and up to date.

Emergency organisation

Comprehensive emergency plans have been defined for emergencies of all kinds, such as fire, industrial accidents and environmental incidents. The mill fire brigade's emergency manual contains instructions for alerting and detailed procedures for emergencies and catastrophes. Follow-up is provided in accordance UPMs "One Safety" tool.

Societal responsibility

Community involvement: Work with youth groups and associations

We make social responsibility a reality through our strong commitment to responsible and ethical business practices wherever we operate. Well-functioning stakeholder dialogue is a key component for UPM's success as a global company. Our operations impact local communities and societies in many ways. We are committed to developing the vitality of the communities close to our operations through active co-operation and open dialogue with various stakeholders as well as, for example, through sponsorships and donations.

For the past 10 years, UPM Nordland Papier in Dörpen has distributed, as part of the "activity card" scheme, a total of € 5,000 each year to ten local associations proposed by the employees. As the decision is made by drawing lots, numerous and very different associations have benefitted from our support, such as children's fire brigades, music clubs, youth groups, sports clubs, etc.

As Germany's largest paper mill, we are able to offer young people not only a variety of work experience placements

but also 13 different vocational training options. During the annual 'Vocational Training Night', more than 150 interested young people are given a tour of the mill to find out about opportunities at UPM Nordland.

The fact that our youngest employees have also internalised our exemplary social commitment is demonstrated, for example, by the donation campaign our trainees organised for the children's hospice in Papenburg.

Since 2017, we have had our interactive "Papierwelt" museum, where visitors find extensive information on UPM and paper products and can try their hand at papermaking. In 2018 our museum „Papierwelt“ was awarded the „KinderFerienland“ certificate for its child friendliness.

Commitment to responsible sourcing practices

We work closely with our suppliers to ensure that they understand and meet all of our requirements on sustainability and responsibility. UPM requires its suppliers to apply the principles of the UPM Supplier and Third Party Code which defines the minimum level of performance





in the areas of environmental impacts, human rights, labour practices, health and safety at work, product safety and corruption and bribery. We monitor the environmental and social performance of our suppliers by regular data collection and analysis. Based on the risk assessments we conduct every year, we decide which suppliers should be subjected to closer scrutiny. In case of non-conformities, the supplier has to take corrective action. We closely monitor the outcome of these measures and are happy to make our expertise available to our suppliers to help them improve their performance.

Health and safety at work

At UPM, occupational safety and preventive healthcare go hand in hand, because just preventing accidents is not enough for us. Our company wants healthy employees who enjoy their work and have fun in life. Our concept in this field is diverse and includes training for occupational health and safety,

health days, flu vaccinations and non-smoking seminars. Also, we offer all our employees the above mentioned "activity card", with which they can collect points for personal health activities, for example through blood donations, nutrition diaries or participation in sporting events. In addition, there is the mill sports team, an ideas competition for occupational safety and the "nopaFit" health room, where medical check-ups are conducted. As the next step on the way to better health, from the beginning of 2020, the old desks will gradually be replaced by new height-adjustable models to promote exercise in the office and prevent back pain, for example.

Performance against targets in 2019

TARGETS AND MEASURES*	TARGET ACHIEVED?	COMMENTS
1 Water Achieve planned quality and quantity of recycled process water* <ul style="list-style-type: none"> – Fresh water saving 100 m³/h – Conductivity < 100µS/cm 	No Yes	– 75 m ³ /h fresh water saving achieved – Average annual conductivity 92 µm/cm
2 Implementation of energy saving measures <ul style="list-style-type: none"> – Optimise Optidry System of PM 1 <ul style="list-style-type: none"> • saving of approx. 4,000 MWh/a – Recycle condensation water of Turbair heat exchanger for use as hot water in production <ul style="list-style-type: none"> • saving of 500 MWh/a – Reduce hot water need for SymSizer pulper PM 4 <ul style="list-style-type: none"> • saving of approx. 1,000 MWh/a 	Yes No Yes	– 4,422 MWh saving achieved – Condensation water recycled, but only 390 MWh saved – 1,240 MWh saving achieved Total savings achieved by these and other measures: Power: 4,102 MWh Heat: 19,009 MWh
3 Environmental incidents <ul style="list-style-type: none"> – No Clean Run category 3, 4 and 5 deviations – All Clean Run category 0, 1 and 2 incidents fully reported and addressed (rule of thumb: 5 per month) 	No Yes	– 2 Clean Run Category 3 incidents – On average 5.9 Category 0–2 incidents reported per month
4 Material efficiency Maintain 2018 reuse rate of rejects at coating machines taking into account the mill's reorientation*	No	Reuse rate on SM1 and SM2 increased by 1.26 and 0.62 percent respectively

Targets for 2020

TARGETS	DEADLINE	DEPARTMENT RESPONSIBLE
1 Water – Effluent treatment by process water recycling – 80 m ³ /h	31.12.2020	Production
2 Implementation of energy saving measures <ul style="list-style-type: none"> – Condensate injection into process steam regulator 11 <ul style="list-style-type: none"> • saving of approx. 2,700 MWh/a – Optimise flow rate through heat exchanger on after-dryer section of PM 3 <ul style="list-style-type: none"> • saving of approx. 800 MWh/a – Replace two gas fork lift trucks by electric trucks in converting <ul style="list-style-type: none"> • saving of approx. 875 MWh/a 	31.12.2020	Production Production Converting
3 Environmental incidents <ul style="list-style-type: none"> – No Clean Run category 3, 4 or 5 incidents – All Clean Run category 0, 1 and 2 incidents fully reported and addressed (rule of thumb: 5/month) 	31.12.2020	All departments
4 Measures to achieve UPM sustainability goals 2030 Prepare investment decision for installation of Hydroseal on PM 3 and PM 4 to reduce fresh water use	31.12.2020	Production, Environmental Management
5 Concept for future use of effluent treatment residue Establish project team and explore recovery options	31.12.2020	Production, Environmental Management

* See the mill's S-imple target setting process for figures



Environmental verifier's declaration on verification and revalidation activities

Environmental verifier Astrid Günther (DE-V-0357), acting for TÜV NORD CERT Umweltgutachter GmbH, licensed for the scope NACE Code 17.12 (papermaking), declares to have verified whether the site Nordland Papier GmbH, in D-26892, Dörpen, Nordlandallee 1, as indicated in the updated UPM Corporate Environmental and Societal Responsibility Statement 2019 of the mentioned site (registration no. FI-000058), meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS).

By signing this declaration, I declare that:

- the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment, the data and information of the updated Environmental Statement

2019 of Nordland Papier GmbH, reflect a reliable, credible and correct image of all the activities of Nordland Papier GmbH, within the scope mentioned in the updated Environmental Statement 2019.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Essen, 14.04.2020

Astrid Günther
 Environmental verifier
 DE-V-0357
 TÜV NORD CERT Umweltgutachter GmbH

We reduce the world's reliance on fossil-based materials by developing renewable and responsible products and solutions in all our businesses. **UPM Biofore – Beyond fossils.**



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